

## CLAIMS

1. An enzyme electrode comprising a  
conductive member and an enzyme, wherein a first  
5 mediator and a second mediator are immobilized by a  
carrier onto the conductive member, the first  
mediator and the second mediator having different  
redox potentials,.

2. The enzyme electrode according to claim 1,  
10 wherein the first mediator has a redox potential more  
negative than the redox potential of the second  
mediator, and the electron transfer reaction rate  
between the second mediator and the conductive member  
is higher than the electron transfer reaction rate  
15 between the first mediator and the conductive member.

3. The enzyme electrode according to claim 1,  
wherein the first mediator has a redox potential more  
positive than the redox potential of the second  
mediator, and the electron transfer reaction rate  
20 between the second mediator and the conductive member  
is higher than the electron transfer reaction rate  
between the first mediator and the conductive member.

4. The enzyme electrode according to claim 1,  
wherein the first mediator serves to transfer  
25 electrons to or from the enzyme, and the second  
mediator serves to transfer electrons to or from the  
first mediator.

5. The enzyme electrode according to claim 1, wherein the conductive member has a porous structure.

6. The enzyme electrode according to claim 1, wherein the first mediator and the second mediator  
5 are respectively at least one substance selected from metal complexes, quinones, heterocyclic compounds, nicotinamide derivatives, and flavin derivatives.

7. The enzyme electrode according to claim 1, wherein the first mediator has a redox potential more  
10 negative than the redox potential of the second mediator, and is employed as an anode.

8. The enzyme electrode according to claim 1, wherein the second mediator has a redox potential more positive than the redox potential of the second  
15 mediator, and is employed as a cathode.

9. A sensor, employing the enzyme electrode set forth in any of claims 1 to 8 as a detection portion for detecting a substance.

10. A fuel cell, employing the enzyme  
20 electrode set forth in any of claims 1 to 8 as at least one of anode and a cathode.

11. An electrochemical reactor, employing the enzyme electrode set forth in any of claims 1 to 5 as a reaction electrode.